SPOTLIGHT ON SEAFOOD SAFETY; CIGUATERA FISH POISONING

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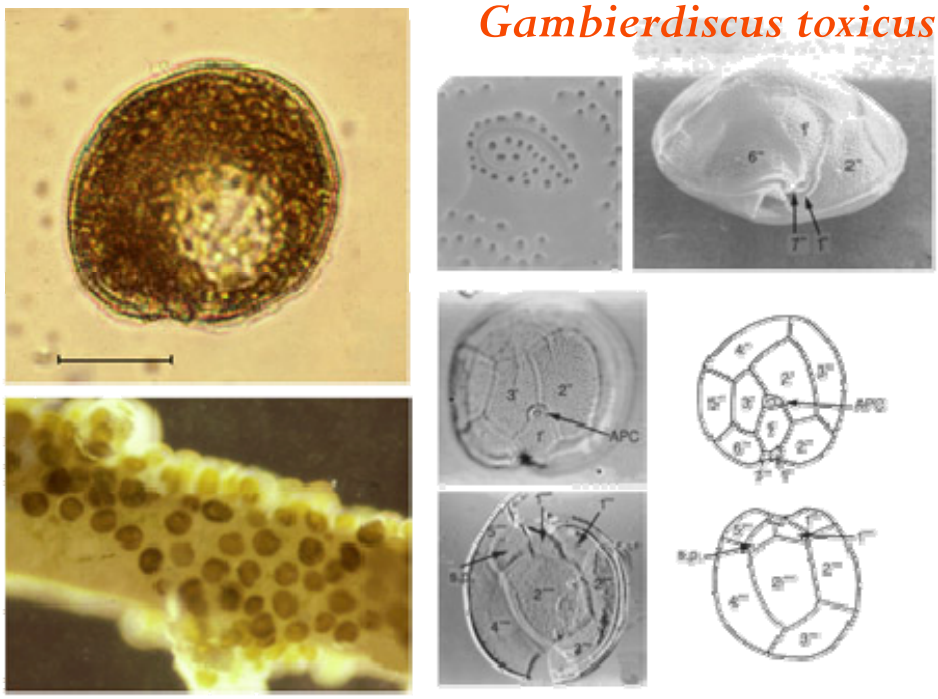
Imagine reaching into your ice chest and getting a hot sensation…or picking up that steaming hot cup of coffee and having it feel cold to the touch. Temperature reversal sensation is one of the tell tail signs of ciguatera fish poisoning (CFP), but there are many other symptoms and not everyone is effected the same.

What is Ciguatera? Ciguatera is a form of seafood poisoning caused by the consumption of contaminated reef fish found in sub-tropical and tropical waters. The poisoning is the result of natural toxins that accumulate in the fish's flesh after feeding on lower members of the aquatic food chain.

The toxins are produced by organisms called dinoflagellates, which are a type of micro algae. These organisms are also responsible for the toxins that cause red tide although a different species is responsible for those events. Ciguatera is the most commonly reported marine toxin disease in the world. According to the Woods Hole Oceanographic Institution, at least 50,000 people who live or visit tropical and sub tropical locations are affected by CFP each year. The Center for Disease Control estimates that only 2-10 percent of these cases are reported in the United States.



The organism responsible for causing ciguatera fish is a marine micro algae named Gambierdiscus toxicus.
(Photomicrograph by Yasuwo Fukuyo - Woods Hole Oceanographic Institution - www.whoi.edu)

Common areas referenced for CFP are tropical reef waters between latitudes 35 degrees south and north, but occurrence within these areas is patchy. The majority of reefs are not ciguatoxic and outbreaks are usually localized. As such, knowledge of the ciguatoxic areas is usually based on the local experience of fishermen and consumers. Our little neck of the woods is generally considered to be low risk for CFP. Most of the cases documented in the literature originated from the South Pacific and the Caribbean; specifically the Lesser Antilles and Bahamas, but also eastern Florida. With that said, earlier this year the U.S. Food and Drug Administration (FDA) administered a seafood advisory to processors after illnesses were reported in the northern Gulf of Mexico. Those toxic fish were harvested near the Flower Garden Banks National Marine Sanctuary, which is located south of the Texas-Louisiana coastline.

What are the symptoms? CFP is described as an acute neurological disease, but also includes gastrointestinal and

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cardiovascular symptoms. Initially victims may experience nausea, abdominal cramps, vomiting and diarrhea, but subsequent symptoms can include headaches, blurred vision, joint pain, irregular pulse rate, decreased blood pressure and tingling sensations in the extremities. One of the most prominent symptoms of CFP is the temperature reversal mentioned above. Symptoms may appear within hours of consuming contaminated fish. They can last for days to weeks, but neurological symptoms may recur for months to years. Severity of symptoms will largely depend on the amount and type of toxins ingested and the rate at which they are eliminated from the body.

Which fish can be Ciguatoxic? Because ciguatera toxins accumulate up the food chain, larger predatory reef fish tend to be more susceptible to CFP. However, any tropical marine fish involved in a food chain where these toxins are present can become a candidate. Documented illnesses and recent analysis indicate some species tend to be worse than others. Among those with the worse reputations in the Caribbean region include barracuda, amberjacks, moray eels, hogfish, scorpion fish, and certain trigger fish, while mackerels, and certain groupers and snappers may also be susceptible. The occurrence of toxic fish is sporadic however, and not all fish of a given species or from a given locality will be toxic.

How can fish eaters protect themselves? Unfortunately ciguatoxic fish cannot be detected by appearance, taste or smell. According to Dr. Steve Otwell, a seafood specialist with the University of Florida, raw and cooked whole fish, fillets or parts have no signs of spoilage, discoloration or deterioration. The toxins present cannot be completely destroyed or removed by cooking or freezing either. Dr. Otwell suggests selecting smaller fish to consume, which are less likely to accumulate toxins. He also recommends avoiding large fish of any tropical species that inhabit tropical reef zones.

Learning about potential affected areas and fish remains the best method for avoiding this form of food poisoning. Consumers purchasing tropical marine fish known to harbor CFP should patronize reputable dealers and restaurants. Vacationers and experienced recreational anglers should exercise caution in areas of concern for particular tropical fish.

Anyone who suspects they have CFP should consult a physician. If possible, obtain portions of the fish that was consumed to help determine the cause. If this is not possible, try to verify the type of fish that was eaten, its size, how it was handled prior to cooking, and how it was cooked. These details will help physicians determine whether the symptoms are from CFP or another type of food poisoning.

Source:

- Adapted from Fluech, Bryan. 2007. What you need to know about Ciguatera. Collier County UF/IFAS Extension Service.

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